

JP 04 20312

<p>93-017530/02 A96 D21 E11 (A14) DOWO 90.07.06 DOW CORNING CORP *US 5173290-A 91.10.04 91US-770823 (+90US-548810) (92.12.22) A61K 7/11 Importing curl retention to hair - using compsn. contg. vinyl copolymer-non-polar silsesquioxane inter-penetrating network as film-former C93-007999</p>	<p>A(12-V4A) D(8-B5) E(5-E1, 5-E2C) R', R'' and R''' = alk(en)yl, aryl or alkylaryl of 1-20C; x and z = 0-1000; and y = 1-1000.</p>
<p>The improvement in a claimed process for imparting curl retention to hair is that the film-forming ingredient used is an interpenetrating polymer network (IPN) including (A) a substd. vinyl copolymer with acrylic, carboxy-late or ether polar functionality; and (B) a nonpolar silsesquioxane of formula (I) or (II). Also claimed is a hair treating compsn. comprising the above IPN together with, as solvent, water and/or alcohol, a hydrocarbon, supercritical CO₂ or N₂ or a volatile sil-lcone.</p> <p>(R'R''SiO)_x(SiO_{4/2})_y (I) (R'R''SiO)_x(SiO_{4/2})_y(R''',SiO_{1/2})_z (II)</p>	<p>ADVANTAGES The use of silsesquioxanes with vinyl copolymers such as Gantrez (RTM) in the form of an IPN yields the follow-ing advantages: (i) possibility of using as much as 30 wt.% solids of the vinyl copolymer in conventional pump hair sprays as oppo-sed to the previous limit of only 7 wt.% solids, thus giving higher holding and reduced volatiles content; (ii) reduced clogging during spraying; (iii) plasticisation of the IPN components by each other without loss of curl retention; and (iv) improved and more uniform film stiffness.</p> <p>PREFERRED COMPOSITION The IPN includes 0.1-30 (esp. 1-5) wt.% (B) and 1-30 (pref. 4-10) wt.% (A). (A) is pref. vinyl Me ether/maleic anhydride copolymer (esp. prefd; e.g. Gantrez (RTM)); poly(vinylpyrrolidone US5173290-A+</p>

<p>(VP)/Et methacrylate (EM)/methacrylic acid (MA)) terpoly-mer; vinyl acetate (VA)/crotonic acid (CA) copolymer; VA/CA/vinyl neodeconate terpolymer; poly (VP/EM)-MA copolymer; octylacrylamide/acrylate/Bu aminoethyl methacry-late) copolymer; or poly(VP/dimethylamino-ethyl-methacry-late) copolymer; or their derive.</p> <p>EXAMPLE A compsn. with 10% solids, viscosity 8.78 cs; curl retention 99% and medium spray pattern was obtd. by form-ing a soln. of 82.2g EtOH, 0.3g aminomethylpropanol and 150g Gantrez Es-225 (RTM: 7g solids partial Et ether of vinyl Me ether/maleic anhydride copolymer) and then adding 2.5g nonpolar silsesquioxane obtd. by hydrolysis of 33g PhSiCl₃ and 12.2g propyl-SiCl₃ in 39.8g toluene and 14.4g isoPrOH using sufficient water to give aq. phase contg. 13-16 wt.% HCl. (9pp1958CMDwgNo0/0).</p> <p>Addnl. Data: HALLORAN D J, VINCENT J M Div ex 90.11.05 90US-609488; Div ex US5085859 A; CIP of US5075103 A</p>	<p>US5173290-A</p>
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